



TECHNICAL DATA SHEET (TDS)

Food Grade Ammonium Bicarbonate

1. Product Identification

Product Name: Food Grade Ammonium Bicarbonate

Chemical Name: Ammonium Hydrogen Carbonate

Synonyms: Ammonium Bicarbonate, Ammonium Acid Carbonate

Chemical Formula: NH_4HCO_3

CAS Number: 1066-33-7

Molecular Weight: 79.06 g/mol

Food Additive Number: E503(ii) / INS 503(ii)

Supplier: Basekim

2. Product Description

Food Grade Ammonium Bicarbonate is a white crystalline powder widely used as a raising and leavening agent in the food industry.

When heated, the product decomposes and releases carbon dioxide, ammonia, and water vapor. Therefore, it is particularly suitable for thin, low-moisture baked products such as biscuits, crackers, cookies, wafers, and similar bakery products.

Its rapid gas release helps manufacturers achieve improved expansion, porosity, spread, and crisp texture.

3. Typical Technical Specifications

Property	Typical Specification
Appearance	White crystalline powder or crystals
Assay	$\geq 99.0\%$
Chemical Formula	NH_4HCO_3
Molecular Weight	79.06 g/mol
CAS Number	1066-33-7
Food Additive Code	E503(ii) / INS 503(ii)
Ammonia Content	Approx. 21.5%
Chloride	Low / within food-grade specification



Property	Typical Specification
Sulfate	Low / within food-grade specification
Residue on Evaporation	Low
Heavy Metals	Within applicable food-grade limits
Lead	Within applicable food-grade limits
Arsenic	Within applicable food-grade limits
Solubility in Water	Soluble
Appearance of Solution	Clear to nearly clear
Odor	Slight ammonia odor
pH	Mildly alkaline
Decomposition	Decomposes upon heating

Note: Exact specifications may vary by production batch and manufacturer. The Certificate of Analysis should be used for final batch acceptance.

4. Main Food Applications

Food Grade Ammonium Bicarbonate is commonly used in:

- Biscuits
- Crackers
- Cookies
- Wafers
- Dry bakery products
- Crisp snacks
- Flat baked goods
- Selected confectionery products

It is especially suitable for products with low final moisture because ammonia can escape efficiently during baking.



5. Functional Properties

Leavening Agent

The product releases gases during heating and promotes dough expansion.

Raising Agent

It helps create a light and porous structure in thin bakery products.

Texture Improvement

The ingredient can contribute to a crisp and light finished texture.

Dough Expansion

Gas generation can improve spread and internal porosity.

Low Sodium Contribution

Unlike sodium bicarbonate, ammonium bicarbonate itself does not add sodium to the formulation.

6. Recommended Use

Food manufacturers should establish the correct dosage through product trials.

The required amount depends on:

- Dough formulation
- Product thickness
- Baking temperature
- Baking time
- Final moisture
- Desired texture
- Flour type
- Sugar and fat content
- Other leavening ingredients

The product is generally best suited to thin, low-moisture baked goods.



Manufacturers should use caution in thick or high-moisture products because incomplete ammonia release may affect odor or flavor.

7. Solubility and Processing

Food Grade Ammonium Bicarbonate dissolves readily in water.

It can be incorporated into suitable bakery formulations either through direct dry blending or controlled dissolution, depending on the production process.

Uniform distribution in the dough helps achieve consistent leavening and finished-product quality.

8. Storage Conditions

Store the product in a:

- Cool area
- Dry environment
- Well-ventilated warehouse
- Tightly sealed package

Protect from:

- Excessive heat
- Moisture
- High humidity
- Direct sunlight
- Contamination
- Strong acids and reactive materials

High temperatures may accelerate decomposition.



9. Packaging

Typical commercial packaging:

25 kg moisture-resistant bags

Alternative packaging may be available depending on order quantity, destination, and customer requirements.

Packaging should remain tightly closed during storage and transportation.

10. Shelf Life

Typical shelf life depends on packaging integrity and storage conditions.

For best performance, store the product under cool and dry conditions and follow the shelf-life information stated on the supplier documentation or Certificate of Analysis.

11. Transportation

Protect the product from excessive heat, moisture, and physical damage during transportation.

For international shipments, suitable moisture-resistant packaging and proper container conditions help preserve product quality.

12. Quality Documentation

The following documents may be supplied according to order and destination requirements:

- Technical Data Sheet
- Safety Data Sheet / MSDS
- Certificate of Analysis
- Product Specification
- Food Grade Declaration
- Packing List
- Certificate of Origin, where applicable



13. Typical Commercial Information

Product: Food Grade Ammonium Bicarbonate

Grade: Food Grade

Food Additive: E503(ii)

CAS Number: 1066-33-7

Standard Packaging: 25 kg bags

Primary Application: Bakery leavening and raising agent

Supplier: Basekim

14. Disclaimer

The technical values shown in this TDS represent typical or general specifications and should not replace a batch-specific Certificate of Analysis.

Food manufacturers and importers should verify the applicable purity standards, permitted uses, and regulatory requirements in the destination market before use.

Supplier: Basekim

Product: Food Grade Ammonium Bicarbonate